



SLOVENSKI STANDARD
SIST EN ISO 3167:2000
01-maj-2000

Plastics - Multipurpose-test specimens (ISO 3167:1993)

Kunststoffe - Vielzweckprobenkörper (ISO 3167:1993)

Plastiques - Eprouvtes a usage multiples (ISO 3167:1993)

Ta slovenski standard je istoveten z: EN ISO 3167:1996

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ICS:

83.080.01	Polimerni materiali na splošno	Plastics in general
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EUROPEAN STANDARD

EN ISO 3167

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 1996

ICS 83.080

Descriptors: Plastics, thermoplastic resins, moulding materials, tests, test specimens, specimen preparation

English version

**Plastics - Multipurpose-test specimens
(ISO 3167:1993)**Plastiques - Eprouvettes à usage multiples
(ISO 3167:1993)Kunststoffe -
(ISO 3167:1993)

Vielzweckprobekörper

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This European Standard was approved by CEN on 1994-12-14. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENEuropean Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

The text of the International Standard from Technical Committee ISO/TC 61 "Plastics" of the International Organization for Standardization (ISO) has been taken over as an European Standard by Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by IBN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 1997, and conflicting national standards shall be withdrawn at the latest by June 1997.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 3167:1993 has been approved by CEN as a European Standard without any modification.

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INTERNATIONAL
STANDARD

ISO
3167

Third edition
1993-06-15

Plastics — Multipurpose test specimens

Plastiques — Éprouvettes à usages multiples

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Reference number
ISO 3167:1993(E)

ISO 3167:1993(E)**Foreword**

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 3167 was prepared by Technical Committee ISO/TC 61, *Plastics*, Sub-Committee SC 2, *Mechanical properties*.

This third edition cancels and replaces the second edition (ISO 3167:1983), which has been extended to introduce the preferred specimen type A with a smaller radius, in order to facilitate the testing of parts with simple machining for a variety of tests.

With respect to existing moulds, the specimen type described in the second edition is included as type B. It may be possible to eliminate type B at the next revision of this International Standard.

The designations of dimensions are harmonized with those of the International Standards for testing which relate to a multipurpose test specimen, in accordance with ISO 31.

Annexes A and B of this International Standard are for information only.

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Plastics — Multipurpose test specimens

1 Scope

1.1 This International Standard specifies requirements relating to multipurpose test specimens for plastic moulding materials intended for processing by injection or direct compression moulding.

1.2 Specimens of types A and B are tensile test specimens, from which with simple machining, specimens for a variety of other tests can be taken (see annex A). Because they have such wide utility, these tensile specimens are referred to in this International Standard as multipurpose test specimens.

1.3 The principal advantage of a multipurpose test specimen is that it allows all the test methods mentioned in annex A to be carried out on the basis of comparable mouldings. Consequently, the properties measured are coherent as all are measured with specimens in the same state. In other words, it can be expected that test results for a given set of specimens will not vary appreciably due to unintentionally different moulding conditions. On the other hand, if desired, the influence of moulding conditions and/or different states of the specimens can be assessed without difficulty for all of the properties measured.

1.4 For quality-control purposes, the multipurpose test specimen may serve as a convenient source of further specimens not readily available. Furthermore, the fact that only one mould is required may be advantageous.

1.5 The use of multipurpose test specimens shall be agreed upon by the interested parties, because there may be significant differences between properties of the multipurpose test specimens and those specified in the relevant test methods.

1) To be published. (Revision of ISO 294:1975)

2) To be published. (Revision of ISO 2818:1980)

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 293:1986, *Plastics — Compression moulding test specimens of thermoplastic materials.*

ISO 294:—¹⁾, *Plastics — Injection moulding of test specimens of thermoplastic materials.*

ISO 295:1991, *Plastics — Compression moulding of test specimens of thermosetting materials.*

ISO 2818:—²⁾, *Plastics — Preparation of test specimens by machining.*

3 Dimensions of test specimens

For the purposes of this International Standard, the preferred multipurpose test specimen is the tensile specimen type A according to figure 1. This can be made suitable for a variety of other tests by simple cutting, because the length l_1 of its narrow parallel portion is $80 \text{ mm} \pm 2 \text{ mm}$.

4 Preparation of test specimens

4.1 Moulding of multipurpose test specimens

The specimens shall be moulded as specified in ISO 293, ISO 294 and ISO 295, as appropriate, and

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under conditions defined for the material under examination.

Strict control of moulding conditions is essential to ensure that all test specimens in a set are actually in the same state.

4.2 Machining of test specimens

4.2.1 Machining of specimens from the multipurpose test specimens shall be performed either as specified in ISO 2818, or as agreed upon by the interested parties. The surface of the central parallel-sided portion of the test specimens shall remain as moulded.

4.2.2 Test specimens having a width of 10 mm shall be cut symmetrically from the central parallel-sided portion of the multipurpose test specimen.

4.2.3 For test specimens longer than 80 mm, the broad ends of the multipurpose test specimen type A (or type B for test specimens longer than 60 mm) shall be machined to the width of the central parallel-sided portion. During the machining operation, care shall be taken to avoid any damage to the moulded surfaces of the central portion. The width of the machined portions of the specimen shall be not less than

that of the central parallel-sided portion, but may exceed the width of the latter by not more than 0,2 mm.

5 Report on preparation of test specimens

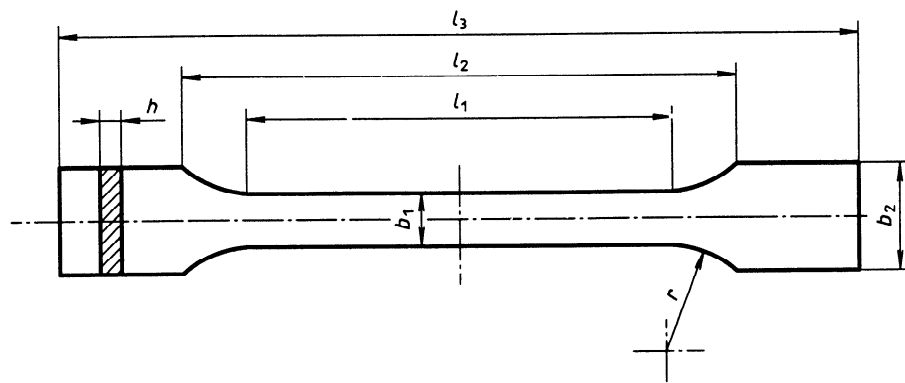
The report shall contain the following information:

- a) reference to this International Standard;
- b) indication of specimen type (A or B);
- c) type, source, manufacturer's code, grade and form, including history, etc. if known;
- d) method of moulding and the conditions used;
- e) method of machining and the conditions used;
- f) number of test specimens;
- g) the standard atmosphere for conditioning, plus any special conditioning treatment if required by the standard for the material or product concerned;
- h) date of preparation.

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Dimensions in millimetres

Specimen type	A	B
l_3 Overall length		≥ 150 ¹⁾
l_1 Length of narrow parallel-sided portion	80 ± 2	$60,0 \pm 0,5$
r Radius	20 to 25	≥ 60 ²⁾
l_2 Distance between broad parallel-sided portions	104 to 113 ³⁾	106 to 120 ³⁾
b_2 Width at ends		$20,0 \pm 0,2$
b_1 Width of narrow portion		$10,0 \pm 0,2$
h Thickness		$4,0 \pm 0,2$

1) For some materials, the length of the tabs may need to be extended (e.g. $l_3 = 200$ mm) to prevent breakage or slippage in the jaws of the testing machine.

$$2) \quad r = \frac{(l_2 - l_1)^2 + (b_2 - b_1)^2}{4(b_2 - b_1)}$$

3) Resulting from l_1 , r , b_1 and b_2 , but within the indicated tolerance.

Figure 1 — Multipurpose test specimen types A and B